

IN THE SPECIFICATION

At page 1, line 12, please cancel the heading "1. Field and background of the invention".

At page 1, the paragraph beginning at line 21 and continuing to line 13 of page 2 has been amended as follows:

--The need of an AEC unit in the hands-free telephones basically arises from an acoustic echo path with an impulse response  $h(i)$  from a local loudspeaker 16 to a local microphone 18. The objective of the echo canceller 10 with an impulse response  $w(i)$  is to find a replica of the echo path in order to compensate for an echo signal  $d(i)$  22 of a voice signal  $x(i)$  20 received by a loudspeaker 16 that provides an acoustic output signal in response to the voice signal  $x(i)$  20, thus generating in the microphone 18 the echo signal  $d(i)$  22 which is one of the components of a microphone signal  $y(i)=d(i)+s(i)+n(i)$  28, where  $[[y(i)]]$   $s(i)$  24 is a microphone speech signal and  $n(i)$  26 is a background noise signal. As the system identification process is always performed in the presence of observation noise (local speech plus background noise)  $s(i)+n(i)$ , the objective of  $w(i)=h(i)$  cannot be reached exactly. The echo canceller 10 generates an estimated echo signal  $d'(i)$  32 which is negatively added to the microphone signal 18 by an adder 30 which generates an echo reduced microphone signal  $e(i)$  34 containing the partially compensated echo signal. The echo reduced microphone signal  $e(i)$  34 is further provided to the gradient adaptation means 12 and to the postfilter 14. The gradient adaptation means 12 further provides a control signal 15 to the echo canceller 10 by determining a gradient of the ~~controlled~~ control signal based on a predetermined criteria using the voice signal  $x(i)$  20 and the echo reduced microphone signal  $e(i)$  34 as input signals. The purpose of the postfilter 14 is further reducing of residual echo components of the echo reduced microphone signal  $e(i)$  34. The resulting output system signal  $s'(i)+n'(i)$  36 after residual echo suppression by the postfilter 14 is then transmitted to the far speaker.--.

At page 2, the paragraph beginning at line 29 has been amended as follows:

--The object of the present invention it to provide an additional statistical adaptive-filter controller for achieving more consistent echo cancellation results and a simpler realization of an acoustic echo control in telephones.--.

At page 3, the paragraph beginning at line 1 has been amended as follows:

--According to a first aspect of the present invention, an echo cancellation system[[,]] comprises a microphone, responsive to an echo signal from a loudspeaker that provides an acoustic output signal in response to a voice signal, for providing an echo signal which is a component of a microphone signal; and a statistical adaptive-filter controller, responsive to the voice signal and to an echo reduced microphone signal, for providing a first control signal to an echo canceller module and a second control signal to a postfilter; said control signals are provided for optimizing cancellation of the echo signal.--.

At page 3, the paragraph beginning at line 10 has been amended as follows:

--In further accord with the first aspect of the invention, the first control signal may be a step-size signal which is used to determine a gradient change of an echo transfer function signal [[15]] provided to an echo canceller [[10]] of the echo canceller module [[21]] according to a predetermined criteria.--.

At page 3, the paragraph beginning at line 20 has been amended as follows:

--Still further according to the first aspect of the invention, the echo cancellation system further comprises the echo canceller module, responsive to the voice signal, to the first control signal, and to an echo reduced microphone signal, for providing an estimated echo signal to an adder. Further, the echo cancellation system may comprise an echo canceller, responsive to the voice signal and to an echo transfer function signal, for providing an estimated echo signal to the adder. Still further, the echo cancellation system may comprise a gradient adaptation means, responsive to the voice signal, to the first control signal, for providing for an echo transfer function signal to the echo canceller. Also further, the echo cancellation system comprising the echo canceller

module, further comprises the postfilter, responsive to an echo reduced microphone signal and to the second control signal, for providing an output system signal.--.

At page 4, the paragraph beginning at line 27 has been amended as follows:

-- According to a second aspect of the invention, a method for acoustic echo control[[,]] comprises the steps of: providing an echo signal which is a component of a microphone signal of a microphone which is responsive to an echo signal from a loudspeaker that provides an acoustic output signal in response to a voice signal; and providing a first control signal to an echo canceller module and a second control signal to a postfilter by a statistical adaptive-filter controller which is responsive to the voice signal and to an echo reduced microphone signal for optimizing echo cancellation of the echo signal.--.

At page 5, the paragraph beginning at line 13 has been amended as follows:

--Further still in accordance with the second aspect of the invention, prior to the step of providing the first and second control signals the method further comprises the step of determining the first and the second control signals by a statistical adaptive-filter controller. Further, after the step of determining the first and the second control signals, the method further comprises the steps of ~~further comprising the steps of:~~ determining an estimated echo signal by the echo canceller module using the first control signal provided by the statistical adaptive-filter controller; and determining an echo reduced microphone signal by an adder by adding the estimate echo signal to a microphone signal. Still further, after the step of determining an echo reduced microphone signal by an adder, the method further comprises the step of determining an output system signal by the postfilter using the second control signal provided by the statistical adaptive-filter controller.--.